



Air Conditioning & Heating

GMVM97 / GCVM97

MODULATING

VARIABLE SPEED GAS FURNACE

UP TO 97% AFUE

HEATING INPUT: 60,000–120,000 BTU/H



Standard Features

- ComfortNet™ Communicating System compatible
- Heavy-duty aluminized-steel tubular heat exchanger
- Stainless-steel secondary heat exchanger
- Self-calibrating modulating gas valve auto-configure for each installation
- Durable Silicon Nitride igniter
- Quiet variable-speed induced draft blower
- Utilizes ComfortNet™ communicating, two-stage or single-stage thermostats
- Self-diagnostic control board with constant memory fault code history output to a dual 7-segment display
- Color-coded low-voltage terminals with provisions for electronic air cleaner and humidifier
- Efficient and quiet variable-speed airflow system gently ramps up or down according to heating or cooling demand
- Multiple continuous fan speed options offer quiet air circulation
- Auto-Comfort and enhanced dehumidification modes available
- All models comply with California Low NOx emissions standards

Cabinet Features

- Designed for multi-position installation —
GMVM97: upflow, horizontal left or right
GCVM97: downflow, horizontal left or right
- Certified for direct vent (2-pipe) or non-direct vent (1-pipe)
- Easy-to-install top venting with optional side venting
- Convenient left or right connection for gas and electrical service
- Cabinet air leakage (Q_{Leak}) $\leq 2\%$
- Heavy-gauge steel cabinet with durable finish
- Fully insulated heat exchanger and blower section
- Airtight solid bottom or side return with easy-cut tabs for effortless removal in bottom air-inlet applications

Contents

Nomenclature	2
Product Specifications	3
Dimensions	4
Airflow Specifications.....	6
Wiring Diagram.....	11
Accessories	12
Thermostats	12



* Complete warranty details available from your local dealer or at www.goodmanmfg.com. To receive the Lifetime Heat Exchanger Limited Warranty (good for as long as you own your home), 10-Year Unit Replacement Limited Warranty and 10-Year Parts Limited Warranty, online registration must be completed within 60 days of installation. Online registration is not required in California or Québec.



NOMENCLATURE

	G	M	V	M	97	060	3	B	N	A	A
	1	2	3	4	5,6	7,8,9	10	11	12	13	14
Brand											Minor Revision
G - Goodman											A - Initial Release
											B - 1st Revision
Configuration											Major Revision
M - Upflow/Horizontal											A - Initial Release
C - Downflow/Horizontal											B - 1st Revision
Motor											NOx
V - Variable Speed ECM / ComfortNet											N - Low NOx
E - Multi-Speed ECM											
S - Single Speed											
Gas Valve											Cabinet Width
M - Modulating											B - 17.5"
C - 2 Stage											C - 21"
S - Single Stage											D - 24.5"
AFUE											Maximum CFM
92 - 92% AFUE											2 - 800 CFM
96 - 96% AFUE											3 - 1200 CFM
97 - 97% AFUE											4 - 1600 CFM
											5 - 2000 CFM
MBTU/h											
040 - 40,000 BTU/h											
060 - 60,000 BTU/h											
120 - 120,000 BTU/h											

SPECIFICATIONS

	GMVM97 0603BNA	GMVM97 0803BNA	GMVM97 0804CNA	GMVM97 1005CNA	GMVM97 1205DNA	GCVM97 0603BNA	GCVM97 803BNA	GCVM97 0804CNA	GCVM97 1005CNA
Heating Data									
High Fire Input ¹	60,000	80,000	80,000	100,000	120,000	60,000	80,000	80,000	100,000
High Fire Output ¹	58,200	77,600	77,600	97,000	116,400	58,200	77,600	77,600	97,000
Low-Fire Steady-State Input ¹	30,000	40,000	40,000	50,000	60,000	30,000	40,000	40,000	50,000
Low-Fire Steady-State Output ¹	29,100	38,800	38,800	48,500	58,200	29,100	38,800	38,800	48,500
AFUE ²	97	97	97	97	97	97	97	97	97
Temperature Rise Range (°F)	20 - 50	30 - 60	25 - 55	35 - 65	35 - 65	35 - 65	35 - 65	35 - 65	35 - 65
Vent Diameter ³	2" - 3"	2" - 3"	2" - 3"	2" - 3"	2" - 3"	2" - 3"	2" - 3"	2" - 3"	2" - 3"
No. of Burners	3	4	4	5	6	3	4	4	5
Circulator Blower									
Available AC @ 0.5" ESP	1.5 - 3	1.5 - 3	1.5 - 4	2 - 5	2 - 5	1.5 - 3	1.5 - 3	1.5 - 4	2 - 5
Size (D x W)	11" x 8"	11" x 8"	11" x 10"	11" x 10"	11" x 11"	11" x 8"	11" x 8"	11" x 10"	11" x 10"
Horsepower @ 1075 RPM	½	½	¾	1	1	½	½	¾	1
Speed	VS ECM	VS ECM	VS ECM	VS ECM	VS ECM	VS ECM	VS ECM	VS ECM	VS ECM
Filter Size (in²)									
Permanent	739	766	862	862	1,035	517	690	690	862
Disposable	370	383	431	431	517	259	345	345	431
Electrical Data									
Min. Circuit Ampacity ⁴	8.8	8.8	11.6	15.4	15.4	8.8	8.8	11.6	15.4
Max. Overcurrent Device (amps) ⁵	15	15	15	20	20	15	15	15	20
Shipping Weight (lbs)	118	121	142	144	157	117	122	144	146

¹ Natural Gas BTU/h

² DOE AFUE based upon Isolated Combustion System (ICS)

³ Installer must supply one or two PVC pipes: one for combustion air (optional) and one for the flue outlet (required). Vent pipe must be either 2" or 3" in diameter, depending upon furnace input, number of elbows, length of run and installation (1 or 2 pipes). The optional Combustion Air Pipe is dependent on installation/code requirements and must be 2" or 3" diameter PVC.

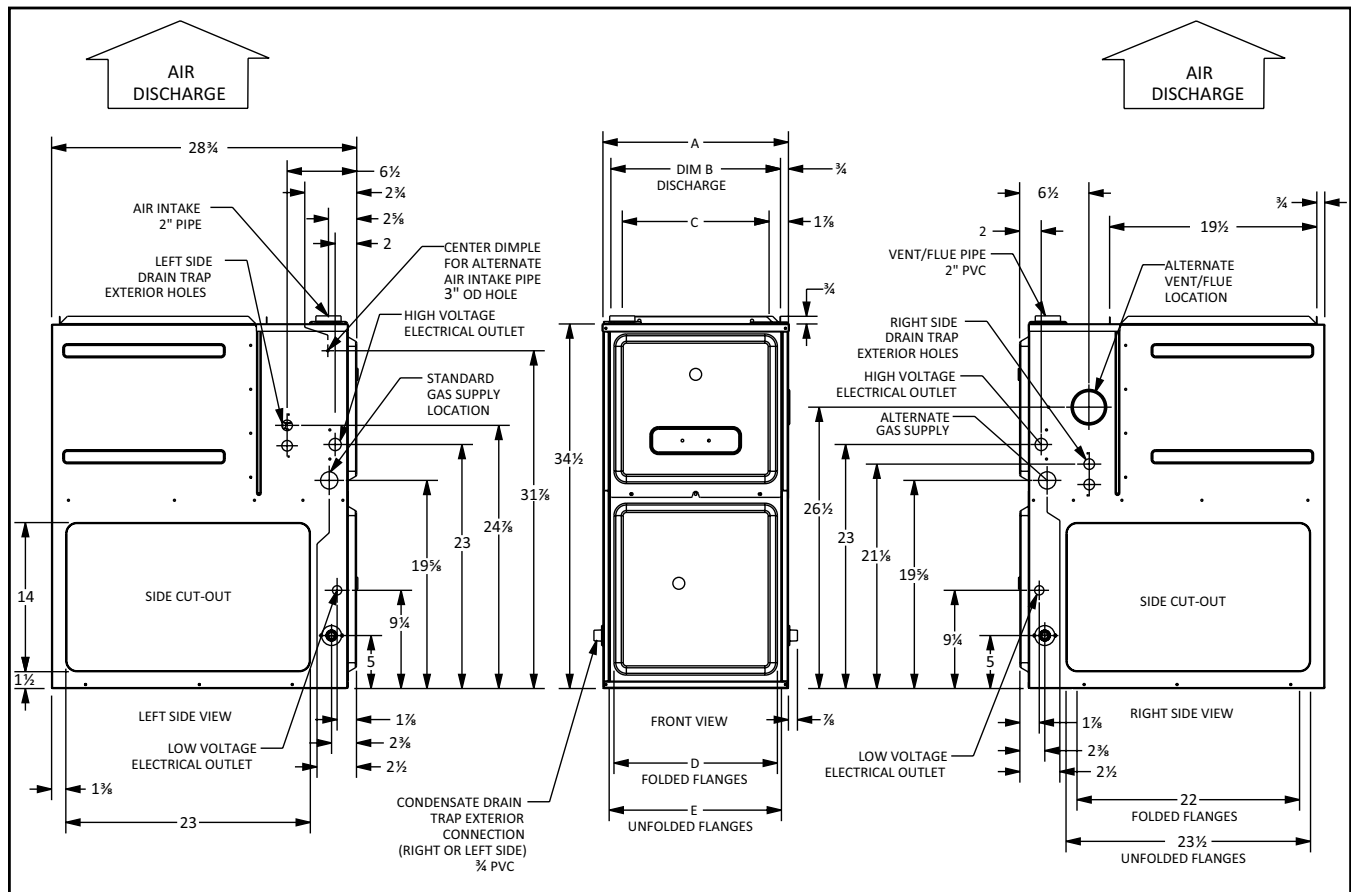
⁴ Minimum Circuit Ampacity = (1.25 x Circulator Blower Amps) + ID Blower amps. Wire size should be determined in accordance with National Electrical Codes. Extensive wire runs will require larger wire sizes.

⁵ Maximum Overcurrent Protection Device refers to maximum recommended fuse or circuit breaker size. May use fuses or HACR-type circuit breakers of the same size as noted.

NOTES

- All furnaces are manufactured for use on 115 VAC, 60 Hz, single-phase electrical supply.
- Gas Service Connection ½" FPT
- Important: Size fuses and wires properly and make electrical connections in accordance with the National Electrical Code and/or all existing local codes.
- For bottom return: Failure to unfold flanges may reduce airflow by up to 18%. This could result in performance and noise issues.
- For servicing or cleaning, a 24" front clearance is required. Unit connections (electrical, flue and drain) may necessitate greater clearances than the minimum clearances listed above. In all cases, accessibility clearance must take precedence over clearances from the enclosure where accessibility clearances are greater.

GMVM97 DIMENSIONS



MODEL	W	D	H
GMVM970603BNA	17½"	28⅞"	34½"
GMVM970803BNA	17½"	28⅞"	34½"
GMVM970804CNA	21"	28⅞"	34½"
GMVM971005CNA	21"	28⅞"	34½"
GMVM971205DNA	24½"	28⅞"	34½"

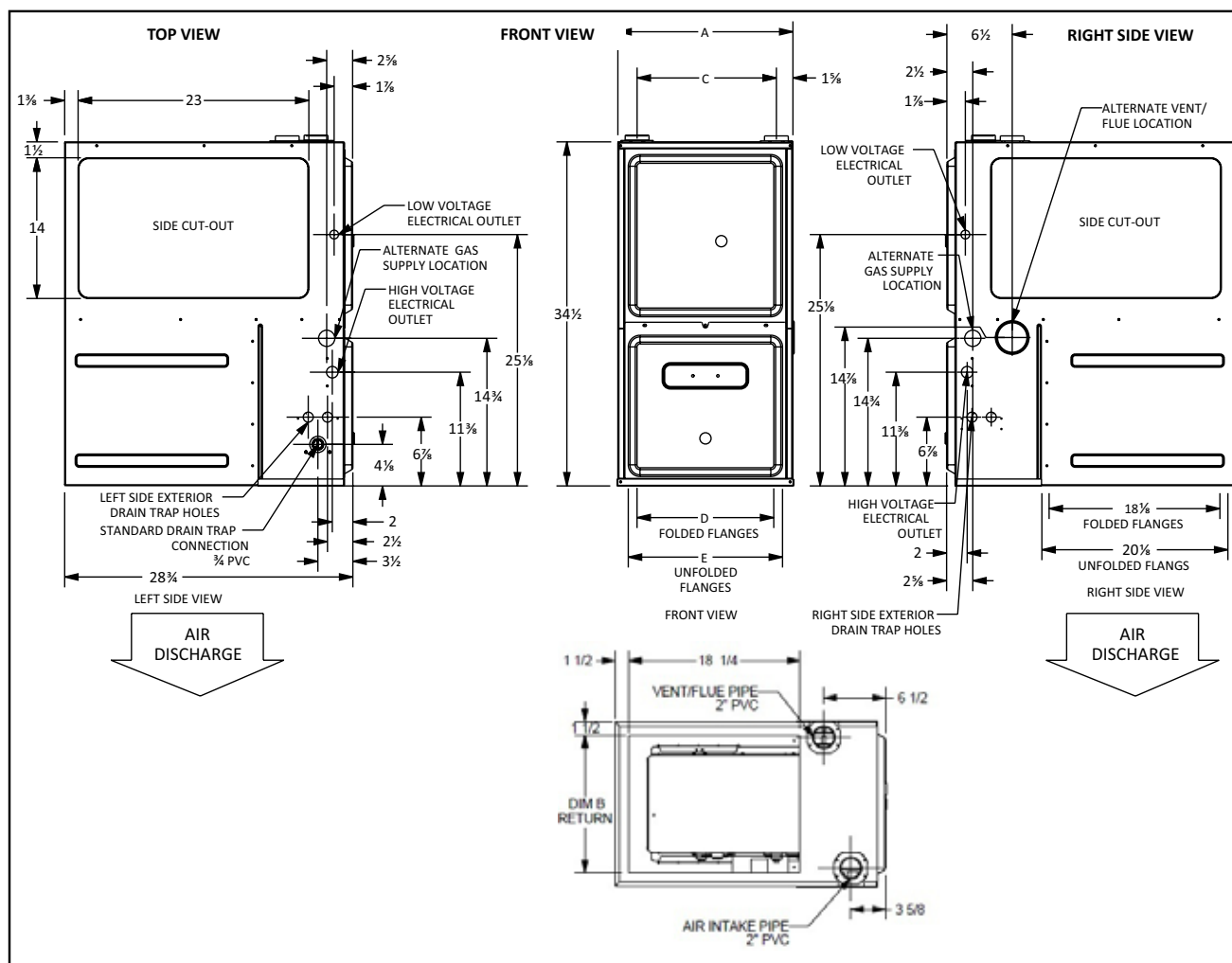
A	B	C	D	E
17½"	16"	13⅞"	12½"	13⅞"
17½"	16"	13⅞"	12½"	13⅞"
21"	19½"	17⅞"	16"	17½"
21"	19½"	17⅞"	16"	17½"
24½"	23"	20⅞"	19⅞"	20⅞"

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS

POSITION	SIDES	REAR	FRONT	BOTTOM	FLUE	TOP
Upflow	0"	0"	3"	C	0"	1"
Horizontal	6"	0"	3"	C	0"	6"

C = If placed on combustible floor, the floor MUST be wood ONLY.

GCVM97 DIMENSIONS



Model	W	D	H
GCVM970603BNA	17 1/2"	28 3/8"	34 1/2"
GCVM970803BNA	17 1/2"	28 3/8"	34 1/2"
GCVM970804CNA	21"	28 3/8"	34 1/2"
GCVM971005CNA	21"	28 3/8"	34 1/2"

A	B	C	D	E
17 1/2"	14 3/8"	14"	14 1/2"	13 3/8"
17 1/2"	14 3/8"	14"	14 1/2"	13 3/8"
21"	18 3/8"	17 1/2"	18"	19 1/2"
21"	18 3/8"	17 1/2"	18"	19 1/2"

MINIMUM CLEARANCES TO COMBUSTIBLE MATERIALS

POSITION	SIDES	REAR	FRONT	BOTTOM	FLUE	TOP
Downflow	0"	0"	3"	NC	0"	1"
Horizontal	6"	0"	3"	C	0"	6"

C = If placed on combustible floor, the floor MUST be wood ONLY.

NC = For installation on non-combustible floors only. A combustible floor sub-base must be used for installations on combustible flooring.

GMVM97 AIRFLOW DATA

GMVM970603BNA
COOLING SPEED
(@ .1" - .8" w.c. ESP)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM
A	Minus 10%	539	358
	Normal	599	398
	Plus 10%	659	438
B	Minus 10%	735	501
	Normal	817	557
	Plus 10%	899	613
C	Minus 10%	906	626
	Normal	1,007	696
	Plus 10%	1,108	766
D	Minus 10%	1,091	729
	Normal	1,212	810
	Plus 10%	1,333	891

GMVM970603BNA
HEATING SPEED
(@ .1" - .5" w.c. ESP; RISE RANGE: 20 - 50°F)

TAP	ADJUST	HIGH-STAGE CFM	RISE (°F)
A	Minus 10%	858	n/a
	Normal	953	n/a
	Plus 10%	1,048	n/a
C	Minus 10%	953	n/a
	Normal	1,059	51
	Plus 10%	1,165	46
D	Minus 10%	1,042	n/a
	Normal	1,158	47
	Plus 10%	1,274	42
D	Minus 10%	1,134	48
	Normal	1,260	43
	Plus 10%	1,386	39

GMVM970803BNA
COOLING SPEED
(@ .1" - .8" w.c. ESP)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM
A	Minus 10%	566	363
	Normal	629	403
	Plus 10%	692	443
B	Minus 10%	725	486
	Normal	806	540
	Plus 10%	887	594
C	Minus 10%	921	635
	Normal	1,023	705
	Plus 10%	1,125	776
D	Minus 10%	1,107	737
	Normal	1,230	819
	Plus 10%	1,353	901

GMVM970803BNA
HEATING SPEED
(@ .1" - .5" w.c. ESP; RISE RANGE: 30 - 60°F)

TAP	ADJUST	HIGH-STAGE CFM	RISE (°F)
A	Minus 10%	1,082	n/a
	Normal	1,202	60
	Plus 10%	1,322	54
B	Minus 10%	1,184	n/a
	Normal	1,316	55
	Plus 10%	1,448	50
C	Minus 10%	1,250	57
	Normal	1,389	52
	Plus 10%	1,528	47
D	Minus 10%	1,256	57
	Normal	1,396	51
	Plus 10%	1,536	47

GMVM970804CNA
COOLING SPEED
(@ .1" - .8" w.c. ESP)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM
A	Minus 10%	710	462
	Normal	789	513
	Plus 10%	868	564
B	Minus 10%	870	594
	Normal	967	660
	Plus 10%	1,064	726
C	Minus 10%	1,064	712
	Normal	1,182	791
	Plus 10%	1,300	870
D	Minus 10%	1,238	822
	Normal	1,375	913
	Plus 10%	1,513	1,004

GMVM970804CNA
HEATING SPEED
(@ .1" - .5" w.c. ESP; RISE RANGE: 25 - 55°F)

TAP	ADJUST	HIGH-STAGE CFM	RISE (°F)
A	Minus 10%	1,105	n/a
	Normal	1,228	n/a
	Plus 10%	1,351	53
B	Minus 10%	1,203	n/a
	Normal	1,337	54
	Plus 10%	1,471	49
C	Minus 10%	1,287	n/a
	Normal	1,430	50
	Plus 10%	1,573	46
D	Minus 10%	1,364	53
	Normal	1,516	47
	Plus 10%	1,668	43

NOTES:

- All furnaces ship as high speed for cooling. Installer must adjust blower speed as needed.
- For most jobs, about 400 CFM per ton when cooling is desirable.
- Do not operate above .5" w.c. ESP in heating mode.
Operating CFM between .5" and .8" w.c. is tabulated for cooling purposes only.

GMVM97 AIRFLOW DATA (CONT.)

GMVM971005CNA
COOLING SPEED
(@ .1" - .8" w.c. ESP)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM
A	Minus 10%	738	508
	Normal	820	564
	Plus 10%	902	620
B	Minus 10%	1,020	706
	Normal	1,133	784
	Plus 10%	1,246	862
C	Minus 10%	1,318	884
	Normal	1,464	982
	Plus 10%	1,610	1,080
D	Minus 10%	1,562	1,133
	Normal	1,736	1,259
	Plus 10%	1,910	1,385

GMVM971005CNA
HEATING SPEED
(@ .1" - .5" w.c. ESP; RISE RANGE: 35 - 65°F)

TAP	ADJUST	HIGH-STAGE CFM	RISE (°F)
A	Minus 10%	1,636	55
	Normal	1,818	49
	Plus 10%	2,000	45
C	Minus 10%	1,683	53
	Normal	1,870	48
	Plus 10%	2,057	44
D	Minus 10%	1,719	52
	Normal	1,910	47
	Plus 10%	2,101	43
D	Minus 10%	1,761	51
	Normal	1,957	46
	Plus 10%	2,153	42

GMVM971205DNA
COOLING SPEED
(@ .1" - .8" w.c. ESP)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM
A	Minus 10%	780	492
	Normal	867	547
	Plus 10%	954	602
B	Minus 10%	1,044	748
	Normal	1,160	831
	Plus 10%	1,276	914
C	Minus 10%	1,320	918
	Normal	1,467	1,020
	Plus 10%	1,614	1,122
D	Minus 10%	1,719	1,150
	Normal	1,910	1,278
	Plus 10%	2,101	1,406

GMVM971205DNA
HEATING SPEED
(@ .1" - .5" w.c. ESP; RISE RANGE: 35 - 65°F)

TAP	ADJUST	HIGH-STAGE CFM	RISE (°F)
A	Minus 10%	1,702	63
	Normal	1,891	57
	Plus 10%	2,080	52
C	Minus 10%	1,746	62
	Normal	1,940	56
	Plus 10%	2,134	51
D	Minus 10%	1,771	61
	Normal	1,968	55
	Plus 10%	2,165	50
D	Minus 10%	1,825	59
	Normal	2,028	53
	Plus 10%	2,231	48

NOTES

- All furnaces ship as high speed for cooling. Installer must adjust blower speed as needed.
- For most jobs, about 400 CFM per ton when cooling is desirable.
- Operation is recommended below .5" w.c. ESP in heating mode. Operating CFM between .5" and .8" w.c. is tabulated for cooling purposes only.

GCVM97 AIRFLOW DATA

GCVM970603BNA
COOLING SPEED
(@ .1" - .8" w.c. ESP)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM
A	Minus 10%	590	390
	Normal	656	433
	Plus 10%	722	476
B	Minus 10%	711	487
	Normal	790	541
	Plus 10%	869	595
C	Minus 10%	875	617
	Normal	972	686
	Plus 10%	1,069	755
D	Minus 10%	1,076	725
	Normal	1,195	806
	Plus 10%	1,315	887

GCVM970603BNA
HEATING SPEED
(@ .1" - .5" w.c. ESP; RISE RANGE: 35 - 65°F)

TAP	ADJUST	HIGH-STAGE CFM	RISE (°F)
A	Minus 10%	844	64
	Normal	938	57
	Plus 10%	1,032	52
C	Minus 10%	855	63
	Normal	950	57
	Plus 10%	1,045	52
D	Minus 10%	887	61
	Normal	986	55
	Plus 10%	1,085	50
D	Minus 10%	893	60
	Normal	992	54
	Plus 10%	1,091	49

GCVM970803BNA
COOLING SPEED
(@ .1" - .8" w.c. ESP)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM
A	Minus 10%	562	365
	Normal	624	405
	Plus 10%	686	446
B	Minus 10%	727	494
	Normal	808	549
	Plus 10%	889	604
C	Minus 10%	895	610
	Normal	994	678
	Plus 10%	1,093	746
D	Minus 10%	1,059	706
	Normal	1,177	784
	Plus 10%	1,295	862

GCVM970803BNA
HEATING SPEED
(@ .1" - .5" w.c. ESP; RISE RANGE: 35 - 65°F)

TAP	ADJUST	HIGH-STAGE CFM	RISE (°F)
A	Minus 10%	950	n/a
	Normal	1,056	n/a
	Plus 10%	1,162	62
B	Minus 10%	1,031	n/a
	Normal	1,146	63
	Plus 10%	1,261	57
C	Minus 10%	1,130	64
	Normal	1,256	57
	Plus 10%	1,382	52
D	Minus 10%	1,214	59
	Normal	1,349	53
	Plus 10%	1,484	48

NOTES

- All furnaces ship as high speed for cooling. Installer must adjust blower speed as needed.
- For most jobs, about 400 CFM per ton when cooling is desirable.
- Operation is recommended below .5" w.c. ESP in heating mode. Operating CFM between .5" and .8" w.c. is tabulated for cooling purposes only.

GCVM97 AIRFLOW DATA (CONT.)

GCVM970804CNA
COOLING SPEED
(@ .1" - .8" w.c. ESP)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM
A	Minus 10%	753	500
	Normal	837	556
	Plus 10%	921	612
B	Minus 10%	920	643
	Normal	1,022	714
	Plus 10%	1,124	785
C	Minus 10%	1,085	754
	Normal	1,206	838
	Plus 10%	1,327	922
D	Minus 10%	1,328	892
	Normal	1,475	991
	Plus 10%	1,623	1,090

GCVM970804CNA
HEATING SPEED
(@ .1" - .5" w.c. ESP; RISE RANGE: 35 - 65°F)

TAP	ADJUST	HIGH-STAGE CFM	RISE (°F)
A	Minus 10%	1,111	65
	Normal	1,234	58
	Plus 10%	1,357	53
C	Minus 10%	1,193	60
	Normal	1,325	54
	Plus 10%	1,458	49
D	Minus 10%	1,298	55
	Normal	1,442	50
	Plus 10%	1,586	45
D	Minus 10%	1,375	52
	Normal	1,528	47
	Plus 10%	1,681	43

GCVM971005CNA
COOLING SPEED
(@ .1" - .8" w.c. ESP)

TAP	ADJUST	HIGH-STAGE CFM	LOW-STAGE CFM
A	Minus 10%	706	472
	Normal	784	524
	Plus 10%	862	576
B	Minus 10%	970	670
	Normal	1,078	744
	Plus 10%	1,186	818
C	Minus 10%	1,249	834
	Normal	1,388	927
	Plus 10%	1,527	1,020
D	Minus 10%	1,589	1,067
	Normal	1,766	1,185
	Plus 10%	1,943	1,304

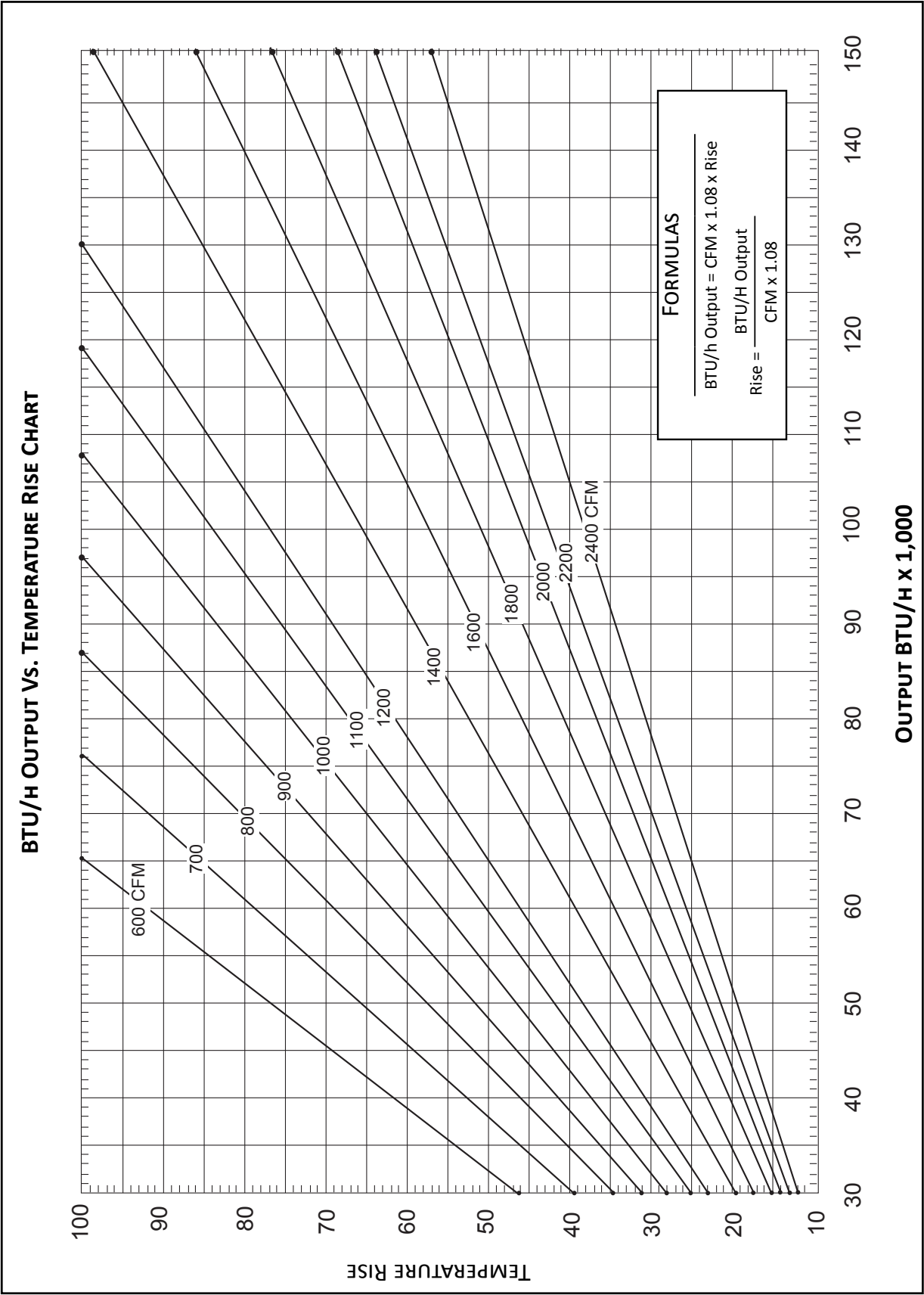
GCVM971005CNA
HEATING SPEED
(@ .1" - .5" w.c. ESP; RISE RANGE: 35 - 65°F)

TAP	ADJUST	HIGH-STAGE CFM	RISE (°F)
A	Minus 10%	1,583	57
	Normal	1,759	51
	Plus 10%	1,935	46
B	Minus 10%	1,617	56
	Normal	1,797	50
	Plus 10%	1,977	45
C	Minus 10%	1,656	54
	Normal	1,840	49
	Plus 10%	2,024	44
D	Minus 10%	1,693	53
	Normal	1,881	48
	Plus 10%	2,069	43

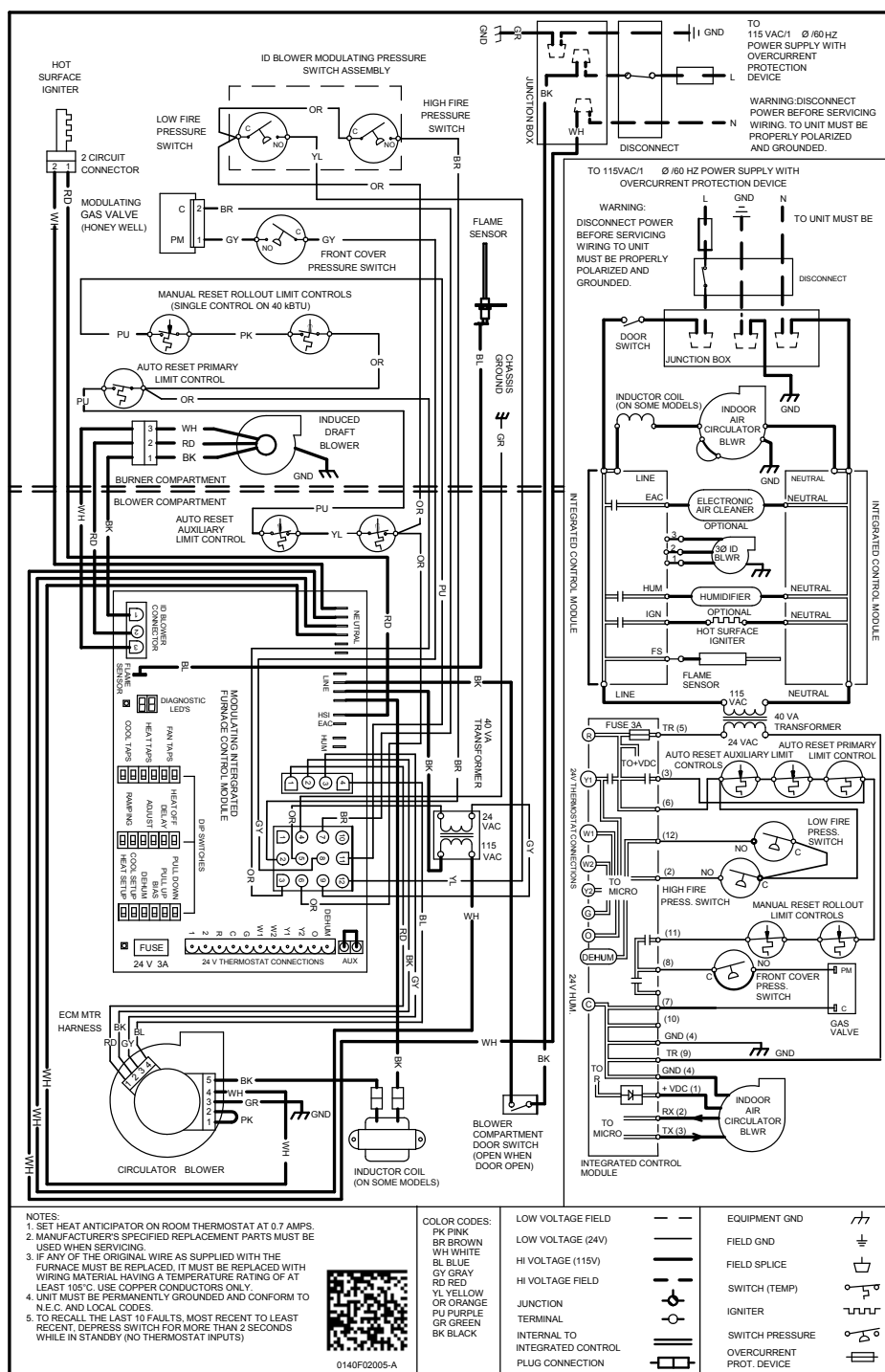
NOTES

- All furnaces ship as high speed for cooling. Installer must adjust blower speed as needed.
- For most jobs, about 400 CFM per ton when cooling is desirable.
- Operation is recommended below .5" w.c. ESP in heating mode. Operating CFM between .5" and .8" w.c. is tabulated for cooling purposes only.

TEMPERATURE RISE RANGE CHART



WIRING DIAGRAM



High Voltage: Disconnect all power before servicing or installing this unit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury, or death.

WARNING

Wiring is subject to change. Always refer to the wiring diagram on the unit for the most up-to-date wiring.

THERMOSTATS



CTK04 ComfortNet-compatible Control



CTK02 ComfortNet-compatible Control

ACCESSORIES

MODEL	DESCRIPTION	GMVM97 0603BNA	GMVM97 0803BNA	GMVM97 0804CNA	GMVM97 1005CNA	GMVM97 1205DNA	GCVM97 0603BNA	GCVM97 803BNA	GCVM97 0804CNA	GCVM97 1005CNA
CVENT-2	Concentric Vent Kit (2")	√	√	√	√	√	√	√	√	√
CVENT-3	Concentric Vent Kit (3")	√	√	√	√	√	√	√	√	√
CFSB17	Downflow Sub-Base 17.5"	---	---	---	---	---	√	√	---	---
CFSB21	Downflow Sub-Base 21"	---	---	---	---	---	---	---	√	√
CFSB24	Downflow Sub-Base 24"	---	---	---	---	---	---	---	---	---
RF000142	Drain Kit -Horizontal Left Vertical Flue	√	√	√	√	√	---	---	---	---
EFR01	External Filter Rack with 16"x25" Permanent Filter	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
0170K00000S	Flush Mount Vent Kit - 3" or 2"	√	√	√	√	√	√	√	√	√
0170K00001S	Flush Mount Vent Kit - 2"	√	√	√	√	√	√	√	√	√
AFE18-60A	Fossil Fuel (Duel Fuel) Kit	√	√	√	√	√	√	√	√	√
	High-Altitude Natural Gas Kit	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	High-Altitude Pressure Switch	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
	High-Altitude LP Gas Kit	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
LPLP03	Low LP Gas Pressure Switch	√	√	√	√	√	√	√	√	√
LPM-09	LP Conversion Kits (Gas Valve)	√	√	√	√	√	√	√	√	√

NOTES

- √ Indicates available for this model
- For installation in Canada, gas furnaces are certified only to 4,500'.